

CLAIMS

What is claimed is:

1. A wet-type electrophotographic printer having a printer body, comprising:
 - a discharge passage through which air inside the printer body is discharged out to an outside of the printer body;
 - at least one discharge fan positioned inside the discharge passage to guide the air inside the printer body to the outside of the printer body; and
 - a photocatalytic filter positioned inside the discharge passage, and having a photocatalytic body coated with a photocatalyst, a plasma electrode disposed on the photocatalytic body, and a plasma generator coupled to the plasma electrode to filter and deodorize the air inside the printer body.
2. The wet-type electrostatic printer of claim 1, wherein the photocatalyst comprises:
 - at least one selected from a group having TiO_2 (titanium dioxide), SiO_2 and ZnO (zinc oxide).
3. The wet-type electrophotographic printer of claim 1, wherein the photocatalyst comprises:
 - TiO_2 (titanium dioxide).
4. The wet-type electrophotographic printer of claim 1, wherein the photocatalytic body comprises:
 - a honey-comb matrix made of one of a ceramic and a metal.
5. The wet-type electrophotographic printer of claim 1, wherein the photocatalytic body comprises:
 - at least one selected from a group having $\gamma-Al_2O_3$, ZrO_2 , SiO_2 , and $SiO_2-Al_2O_3$.
6. The wet-type electrophotographic printer of claim 1, wherein the photocatalytic body coated with the photocatalyst, and the photocatalytic filter comprises a plurality of poles of the plasma electrode formed on front and rear sides sides of the photocatalytic body, and

the plasma generator is connected to the poles of the plasma electrode.

7. A wet-type electrophotographic printer having a printer body and a fusing roller unit fusing a developed image on a sheet of paper, comprising:

a discharge duct having an inlet portion disposed adjacent to the fusing roller and an outlet portion disposed between the inlet portion and an outside of the printer body to discharge air from an inside of the printer body to the outside of the printer body;

a discharge fan disposed in the discharge duct and between the inlet portion and the outlet portion to guide the air inside the printer body in a direction from an inside of the printer body to the outside of the printer body along the discharge duct; and

a photocatalytic filter disposed in the discharge duct between the inlet portion and the outlet portion to filter and deodorize the air passing through the discharge duct.

8. The wet-type electrophotographic printer of claim 7, wherein the inlet portion of the discharge duct is disposed to enclose a portion of the fusing roller unit.

9. The wet-type electrophotographic printer of claim 7, wherein the fusing roller unit comprises a fusing roller and a backup roller, the paper passes through between the fusing roller and the backup roller, and a portion of one of the fusing roller and the backup roller is disposed in an inside of the inlet portion of the discharge duct.

10. The wet-type electrophotographic printer of claim 9, wherein the common center line meets a line in the direction of the air in the discharge duct.

11. The wet-type electrophotographic printer of claim 7, wherein the photocatalytic filter has the same area as the discharge duct in a direction from the inlet portion to the outlet portion.

12. The wet-type electrophotographic printer of claim 7, wherein the photocatalytic filter comprises:

a carbon filter having an absorbent material.

13. The wet-type electrophotographic printer of claim 7, wherein the photocatalytic filter comprises:

a non-thermal plasma system.

14. The wet-type electrophotographic printer of claim 7, wherein the photocatalytic filter comprises:

- a photocatalytic body coated with a photocatalyst;
- a plasma electrode disposed on the photocatalytic body; and
- a plasma generator coupled to the plasma electrode to filter and deodorize the air inside the printer body.

15. The wet-type electrophotographic printer of claim 14, wherein the photocatalytic body of the photocatalytic filter is perforated.

16. The wet-type electrophotographic printer of claim 14, wherein the photocatalytic body of the photocatalytic filter comprises a first side facing the inlet portion and a second side facing the outlet portion, and the plasma electrode comprises:

- a first pole coupled to the first side of the photocatalytic body; and
- a second pole coupled to the second side of the photocatalytic body.

17. The wet-type electrophotographic printer of claim 7, wherein the photocatalytic filter comprises:

- a photocatalytic body coated with a photocatalyst to generate plasma to obtain an active photocatalysis reaction from the photocatalyst.

18. The wet-type electrophotographic printer of claim 17, wherein the photocatalyst comprises:

- one of TiO₂ (titanium dioxide), SiO₂ and ZnO (zinc oxide).

19. The wet-type electrophotographic printer of claim 17, wherein the photocatalyst body comprises:

- one of ceramic and a metal.

20. The wet-type electrophotographic printer of claim 17, wherein the photocatalyst body comprises:

one of a honey-comb matrix shape, a circle, and a rectangle in cross-section in another direction perpendicular to the direction of the air.